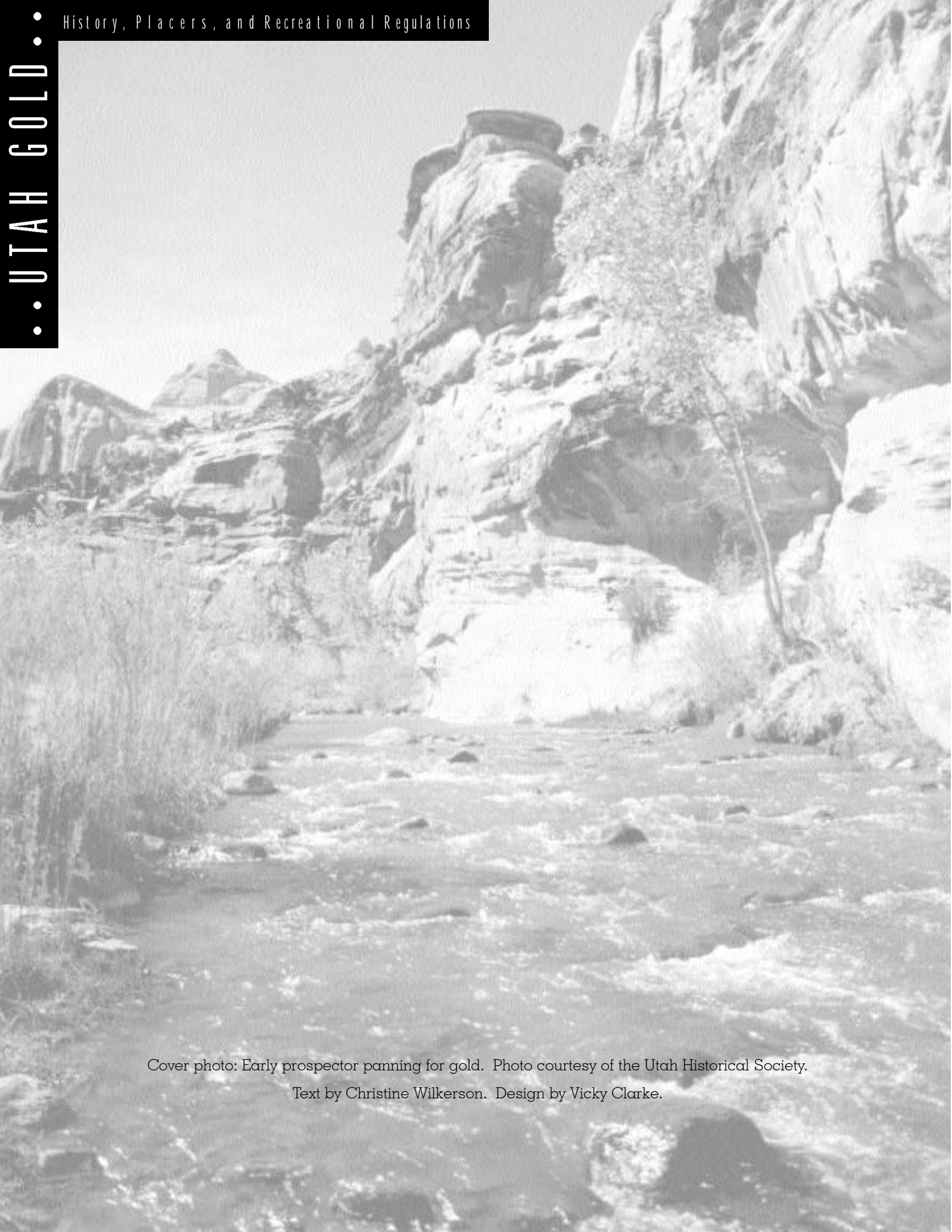


UTAH GOLD



History, Placers, and
Recreational Regulations



Cover photo: Early prospector panning for gold. Photo courtesy of the Utah Historical Society.

Text by Christine Wilkerson. Design by Vicky Clarke.

UTAH'S GOLD HISTORY

Lode and Placer Deposits

Geologic processes concentrate gold into two principal types of deposits: lode (or primary) deposits where gold is deposited by gold-bearing solutions within rock formations; and placer (or secondary) deposits where gold-bearing rocks are eroded and the free gold is concentrated in stream beds. Most prospectors began their search for gold by looking for placer deposits because they offered quick returns with simple equipment. The discovery of placer deposits often led to the discovery of lode deposits. In Utah, primary gold deposits have proven to be more economical than placer deposits.

Early Discoveries

The first reported gold discoveries in Utah were from mines worked in the early 1840s by Spanish-Americans near Cedar City in Iron County and Kamas in Summit County. In 1847, the primary influx of Utah pioneers, Mormon settlers (members of the Church of Jesus Christ of Latter-day Saints), arrived in Salt Lake Valley. Unlike settlers in other western states who prospected for precious metals, early Utahns concentrated on farming, raising livestock, and establishing communities, and only mined materials necessary for home industries such as salt, coal, lead, and sulfur. Therefore, it wasn't until 1858 that the next gold discovery was reported. Westbound travelers on their way to California found gold at Gold Hill in Tooele County. Native Americans initially drove away prospectors, discouraging any mining in the area. Prospectors were persistent, however, and in 1869, the Clifton (Gold Hill) district was organized. Small amounts of gold, silver, and lead were produced over the next few years. Mining activity and production increased in 1892, when a mill was constructed to treat the ores.

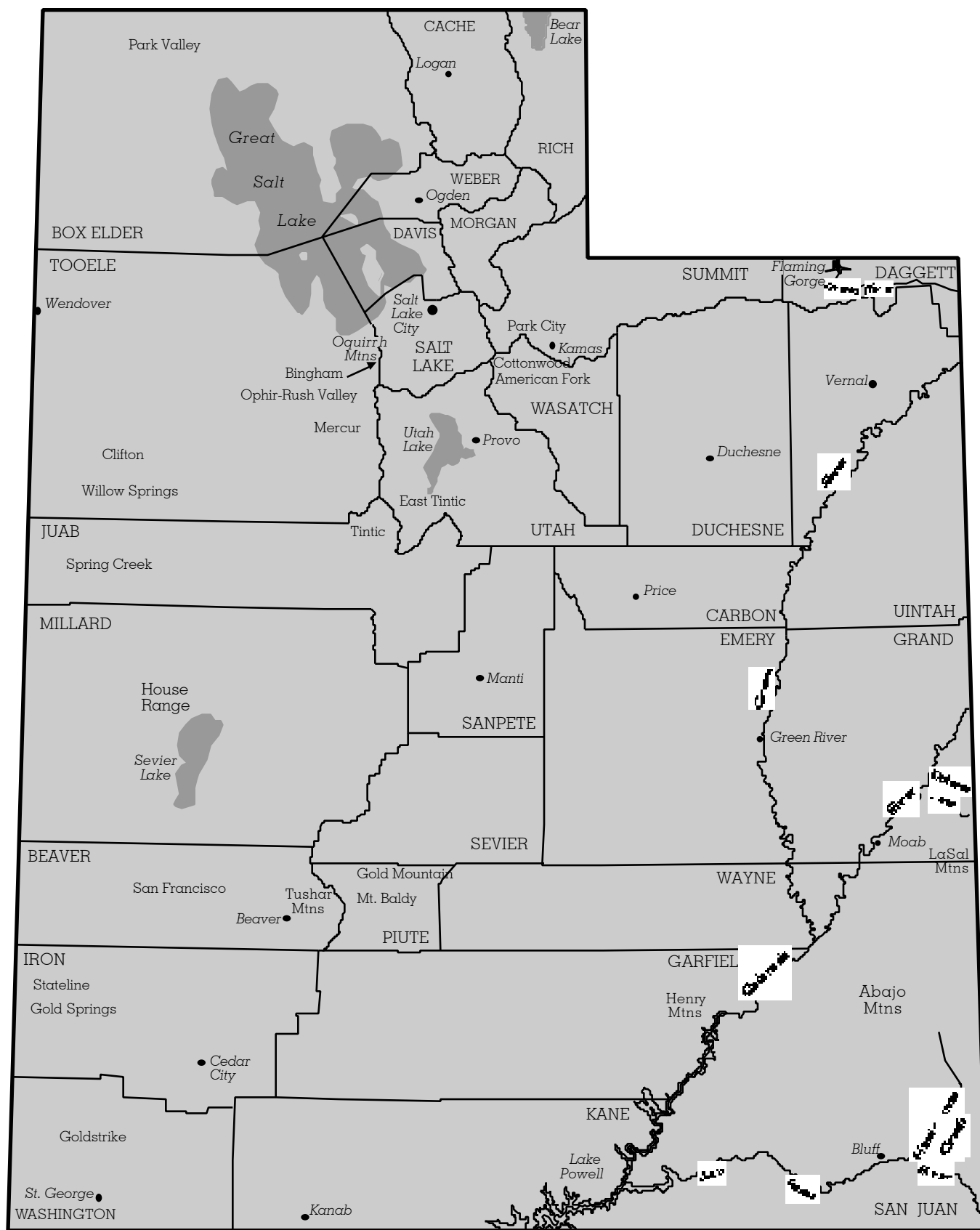
General Patrick E. Connor, stationed with his regiment at Camp Douglas in the foothills east of Salt Lake City, and others formally organized the first

mining district, West Mountain (currently Bingham) in 1863, after the discovery of lead-silver ore in Bingham Canyon in the Oquirrh Mountains of Salt Lake County. Placer gold was discovered in Bingham Canyon the following year. These placers were the largest and most productive ever discovered in Utah, yielding about \$1.5 million in gold. However, they were practically depleted by 1900.

A gold placer in the Mercur (previously Camp Floyd) district in Tooele County was discovered in 1870. A few prospectors staked claims but soon abandoned their endeavors due to the scarcity of both water and gold that could be panned. Silver ores kept the district alive until around 1880. About 1883, gold-bearing ores were found, but the gold could not be separated from the rock. Disappointed, prospectors again left the district. Then, in 1889, these ores were rediscovered and the gold successfully recovered using the newly developed cyanide leaching process. From 1890 to 1900, almost 2 million tons of gold ore were treated, producing over 380,000 ounces of gold worth about \$8 million.

In the 1880s, Bluff residents intermittently prospected the San Juan River and its tributaries. In 1892, exaggerated tales of the area's fabulously rich river placers and sandstone terraces spread like wildfire throughout the West. A stampede of 1,200 prospectors followed, creating the "Bluff excitement" in the winter of 1892-93. After enduring hardships, much fighting, and some bloodshed, the prospectors discovered that the gold was very fine grained, making recovery difficult, and in a few months the area was practically abandoned.

In the late 1800s and early 1900s, gold placer mining was conducted in the Tushar, Henry, La Sal, and Abajo Mountains and along the Colorado, San Juan, and Green Rivers and their tributaries. Early gold-producing districts, some mining gold as a by-product of other metals, included Tintic, Bingham, Mercur, Park City, Gold Mountain, Gold Springs, State Line, Clifton, Park Valley, Spring Creek, American Fork, and San Francisco.



Gold producing areas in Utah (mentioned in text).



Gold mining along the San Juan River, 1894. Five dollars per day was paid to each man working this claim. Photo courtesy of the Utah Historical Society.

During these early years of discovery, thousands of claims were filed and many mines started. Eventually most of these were either mined out and abandoned, or were consolidated and worked by large mining companies.

1900s Activity

Gold production declined and many gold mines closed during World War I (1914-1918) due to a shortage of manpower, decreasing ore reserves, and increasing costs. During the depression in the early 1930s, gold mines were brought back to life and prospectors thoroughly searched the known and little-known gold-producing areas. Gold production increased rapidly when the government-regulated price of gold was raised in 1934 from \$20.67 to \$35.00 per ounce. This interval of increased productivity ended during World War II when gold mines were closed in 1942 by the War Production Board and were not permitted to reopen until the war ended. By-product gold, such as the gold recovered with the

copper ores in the Bingham mining district, accounted for most of the gold produced during the war.

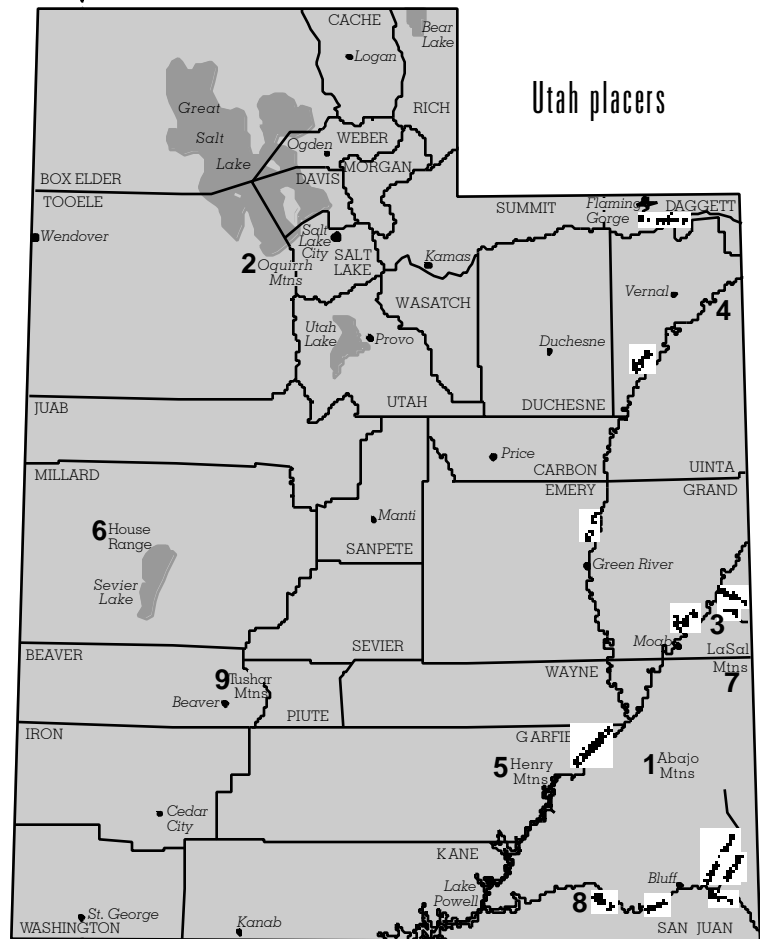
After the war, some gold mines remained closed due to the fixed selling price and rising operation costs. The active Utah gold-producing areas at this time included the Bingham, Cottonwood (Big & Little), East Tintic, Gold Mountain, Mt. Baldy, Ophir-Rush Valley, Park City, Tintic, and Willow Springs districts, and the Notch Peak (in the House Range) and La Sal Mountain placers, although some only operated intermittently or produced small amounts.

In 1968, gold's fixed price of \$35 per ounce was terminated and its price increased, reaching more than \$800 per ounce in 1980. Since then, the price has remained in the range of \$300 to \$500 per ounce.

Exploration and development continues in Utah today. Old mining districts are being re-explored and in some cases, revived using new technologies. Recent major gold developments include operations in the Bingham, Mercur, Goldstrike, Tintic, and East Tintic mining districts.

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1. Abajo Mountains - Along Johnson and Recapture Creeks.
2. Oquirrh Mountains, Bingham Canyon - Was the largest gold placer in Utah. The original topography has been altered by the open-pit mining operations.
3. Colorado River - From the mouth of the Dolores River south to the Amasa Back bend west of Moab. Most placers were from the Dirty Devil



4. Green River - From Flamingo Gorge Reservoir down to Horseshoe Bend.
5. Henry Mountains - On the east flanks of Mt. Ellen in Crescent Creek and Mt. Pennell along Straight Creek.
6. House Range - In Amasa Valley and Miller Canyon.
7. La Sal Mountains - In glacial deposits and streams of Miners Basin, Wilson Mesa, Bald Mesa, and around North Mountain.
8. San Juan River - From the mouth of Montezuma Creek west to Lake Powell.
9. Tushar Mountains - In Mill Creek on the north flank of Signal Peak and near the mouth of Pine Gulch Creek in Bullion Canyon.

FOOL'S GOLD

"Gold, I found gold!," you shout to your friends. You quickly imagine all the things you are going to do with your newfound wealth. Then reality sets in, and you are embarrassed to discover that you have been tricked by the mineral pyrite, also known as fool's gold. Take heart, you are not the first person (nor the last) to be fooled by pyrite. Even Captain John Smith (of Pocahontas fame) mistakenly sent an entire shipload of pyrite to London in the early 1600s, while exploring the Chickahominy River for a waterway to the Pacific.

How can I tell the difference between gold and pyrite (fool's gold)?

Visual clues

Color: Gold and pyrite both have a brilliant metallic luster, but are different tones of yellow. Gold is golden to silvery yellow, whereas pyrite is a pale to medium brassy yellow that sometimes tarnishes.

Shape: Gold usually occurs in nuggets or very small flakes, sheets, and shapeless grains. Small cubic and octahedral (two pyramids with bases joined) gold crystals are very rare. Pyrite crystals commonly form cubes, octahedrons, or pyritohedrons (twelve irregular, pentagonal, or five-sided faces), frequently with striations (parallel lines) on the crystal faces. Pyrite can also occur as shapeless grains.

Physical tests

Hardness: Scratch the mineral with the blade of a pocket knife. Rub off any loose powder to see if the mineral has been scratched. Gold is much softer



Pyrite crystals commonly form pyritohedrons (twelve irregular five-sided faces) with striations on the crystal faces.

than pyrite and can be cut. Pyrite cannot be scratched. (Beware - *chalcopyrite* looks similar to pyrite, but is softer and can be scratched with a knife. It is a very brassy yellow, often with a bronze or iridescent tarnish.)

Odor: Rub the mineral vigorously with a hard object. Gold has no odor, but pyrite gives off a sulfurous smell (like rotten eggs).

Malleable: Strike the mineral with a steel hammer. Gold will flatten or change shape without breaking. Pyrite will give off sparks.

**Good luck in your quest for gold
and don't be fooled by fool's gold!**

RECREATIONAL GOLD PANNING AND DREDGING REGULATIONS

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What is recreational gold panning and dredging?

*Recreational Panning** - using non-mechanized equipment such as a pan, sluice box, or pick and shovel that does not disturb the earth above the water line or outside a dry stream bed.

*Recreational Dredging** - using a suction dredge with an intake diameter of up to three inches and having a rating of up to fifteen horse power or using hand-operated sluice equipment and related tools. Dredging must occur beneath the existing water surface or upon non-vegetated sand and gravel bars within the active stream channel.

**from U.S. Bureau of Land Management and Utah Division of Water Rights information.*

What are the regulations regarding recreational gold panning and dredging?

(See *Additional Information* on page 8 for addresses of government agencies.)

Regulations differ depending on which federal or state agency administers the land on which you wish to pan or dredge. These agencies have maps showing the land under their jurisdiction, and land ownership maps for the entire state can be obtained at U.S. Bureau of Land Management offices.

School & Institutional Trust Lands (formerly State Lands): You need a lease for recreational gold panning and dredging. Contact the School & Institutional Trust Lands Administration for lease information.

Utah Division of Water Rights: Prospecting is only allowed on open streams (which depends on fish spawning and other factors). Contact the Utah

Division of Water Rights for a list of open streams. Recreational dredging on any stream requires a permit from the Utah Division of Water Rights (see permit information on next page).

U.S. Bureau of Land Management (BLM): You need to determine if the land is open to prospecting, withdrawn from mineral entry, or already covered with mining claims. No mining can occur on withdrawn land. If current mining claims are present, you need to obtain permission from the mining claimant before panning or dredging. To obtain withdrawal and claim status, contact the BLM with the township, range, and section coordinates for your location (shown on topographic maps). Recreational dredging on any stream requires a permit from the Utah Division of Water Rights (see permit information on next page).

U.S. Forest Service: Most of the National Forests in Utah are open to prospecting, including gold panning. However, some areas within the National Forests are privately owned or already contain mining claims; therefore, you cannot prospect in these areas without permission from the owner or claimant. Additionally, other areas are closed to all types of prospecting and mining. Contact the local District Ranger's office for information about these areas and land ownership. Recreational dredging on any stream requires a permit from the Utah Division of Water Rights (see permit information on next page). A "Notice of Intent" is required to be filed with the local District Ranger if your dredging operation might cause a disturbance of surface resources in a National Forest.

Restricted Areas: National parks, monuments, and recreation areas; state parks; Indian reservations; military reservations; wildlife refuges; and officially designated wilderness areas are closed to prospecting. The entire Utah stretches of the Green, Colorado, and San Juan Rivers are closed to dredging and sluicing activity under the Recreational Dredging and Sluicing Application (see permit information on next page) due to the presence of Threatened and Endangered Aquatic Species. Contact the Utah Division of Water Rights or the Utah Division of Oil, Gas and Mining for additional permit information regarding activities along these rivers.

Do I need a permit?

You do not need a permit for *recreational gold panning* on BLM or Forest Service land, as long as you follow the regulations stated in the section on the previous page. However, *recreational dredging* on any stream requires a permit from the Utah Division of Water Rights. The Recreational Dredging and Sluicing Application must be filed with both the Division of Water Rights and the local BLM office. With this permit, recreational dredging is only

allowed for a total of 45 days during the calendar year. If a longer time is desired or you cannot operate within the permit conditions or you want to conduct activities on streams closed to prospecting or mining, other forms of permitting are required. Contact the Utah Division of Water Rights, the Utah Division of Oil, Gas and Mining, or the appropriate federal land management agency for additional information and requirements. Contact the Division of Water Rights for the application.

Conditions of Approval for the Recreational Dredging and Sluicing Application

(from the Utah Division of Water Rights)

1. Dredging shall be conducted in a manner such that the return water from the dredge does not increase the turbidity of the stream further than 40 feet below the dredging operation or have adverse impacts upon the water quality or stream channel stability.
2. Use of equipment other than that listed on the application, nozzle diameter in excess of 3 inches (as required by EPA), or equipment capacity in excess of 15 horse power is a violation of the permit.
3. All refuse, chemicals, and petroleum products shall be stored and maintained away from the stream and disposed of away from the site in an approved waste disposal facility. No petroleum products shall enter the stream at any time.
4. The permit specifically prohibits the following activities:
 - a. Disturbance of any stream bank or undercut stream bank areas.
 - b. Hydraulic mining operations of any type.
 - c. Damming of a stream channel for any reason.
 - d. Using winches to move boulders which cannot be moved by hand. Removal of boulders from the streambed to bank.
 - e. Deposition of discharge material to redirect stream current.
 - f. Removal or discharge of material from outside the existing water surface.
 - g. Use of mercury or other processing/extractive chemicals.
5. No power equipment shall be operated within 500 feet of a developed campground or state park.
6. Dredging shall not be conducted within 100 feet of a bridge support, nor shall dredging interfere with any existing habitat improvement structures, stream channel improvements, gauging stations, or diversions.
7. No dredging is permitted in streams that contain threatened or endangered fish or amphibian species.
8. All sites must be accessed by existing trails or roads, unless other appropriate permits are acquired.
9. Anchorage systems may not restrict water craft; free unobstructed access to boaters must be allowed.
10. Violations of any condition of this permit may result in cancellation of this permit without further notice.
11. Prospecting and camping areas should be left clear of all litter and refuse. Pack it in! Pack it out!

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state. Evaluates the area using alteration patterns and determines that, for 1970, commercial production is uneconomical.

Geologic map of the Gold Bar Canyon quadrangle, Grand County, Utah, UGS Map 155, 26 p., 2 plates, 1:24,000, 1994. Covers the Amasa Back bend area of the Colorado River.

Rocks & Minerals Utah Special, reprint, UGS Public Information Series #26, 62 p., 1994. This colorful magazine has several articles on gold-mining areas of Utah including Park City, the Tintic District, and Bingham copper mine.

Gold occurrence in the Cretaceous Mancos Shale, eastern Utah, UGS Contract Report 91-5, 21 p., 1991. Persistent rumors of high-grade gold mineralization throughout the section have been reported for years. This publication evaluates these reports and concludes that it is unlikely that gold exists in commercially extractable quantities.

Skarn occurrences in Utah and the potential for associated gold mineralization, UGS Contract Report 91-13, 29 p. plus 20 p. appendix, 1991. Thirty-four of the 146 skarn occurrences in Utah contain greater than 0.01 opt (0.34 ppm) gold and are classified as gold-bearing. Skarns in which gold is a primary or secondary commodity occur in the Bingham and Gold Hill mining districts. The presence of gold in minor to ore-grade concentrations in numerous Utah skarns favors additional discoveries of gold in the skarn environment.

Minerals and mineral localities of Utah, UGS Bulletin 117, 177 p., 1981, (photocopy only). Contains alphabetical listings of: 1) mining districts; 2) mining districts, mines, and mineral localities with the minerals found, by county; and 3) a brief description of the 706 minerals found in Utah and their occurrences. An appendix has alphabetical listings of minerals grouped by: a) minerals of the state; b) minerals by each county; c) crystal system; d) chemical class; e) selected minerals of the state; and f) selected metallic minerals of each county.

Geochemical reconnaissance at Mercur, Utah, UGS Special Study 43, 16 p., 1973, (photocopy only). A geochemical reconnaissance was conducted in the

abandoned Mercur (Camp Floyd) mining district in the south Oquirrh Mountains to determine the average amount of gold and silver remaining in the district and to locate possible prospects.

Characteristics of acid-sulfate alteration in the Marysvale-Pioche mineral belt: a guide to gold mineralization, UGS Miscellaneous Publication 91-2, 29 p., 1991. These acid-sulfate occurrences were investigated and assessed for their relative gold potential. Work included mapping, geochemistry, petrography, and literature review.

Field guide to geologic excursions in Utah and adjacent areas of Nevada, Idaho, and Wyoming, UGS Miscellaneous Publication 92-3, 481 p., 1992. Several papers in this field guide are on gold, including the Oquirrh Mountain, Barneys Canyon, and Mercur deposits

U.S. GEOLOGICAL SURVEY (USGS) (Utah address on previous page)

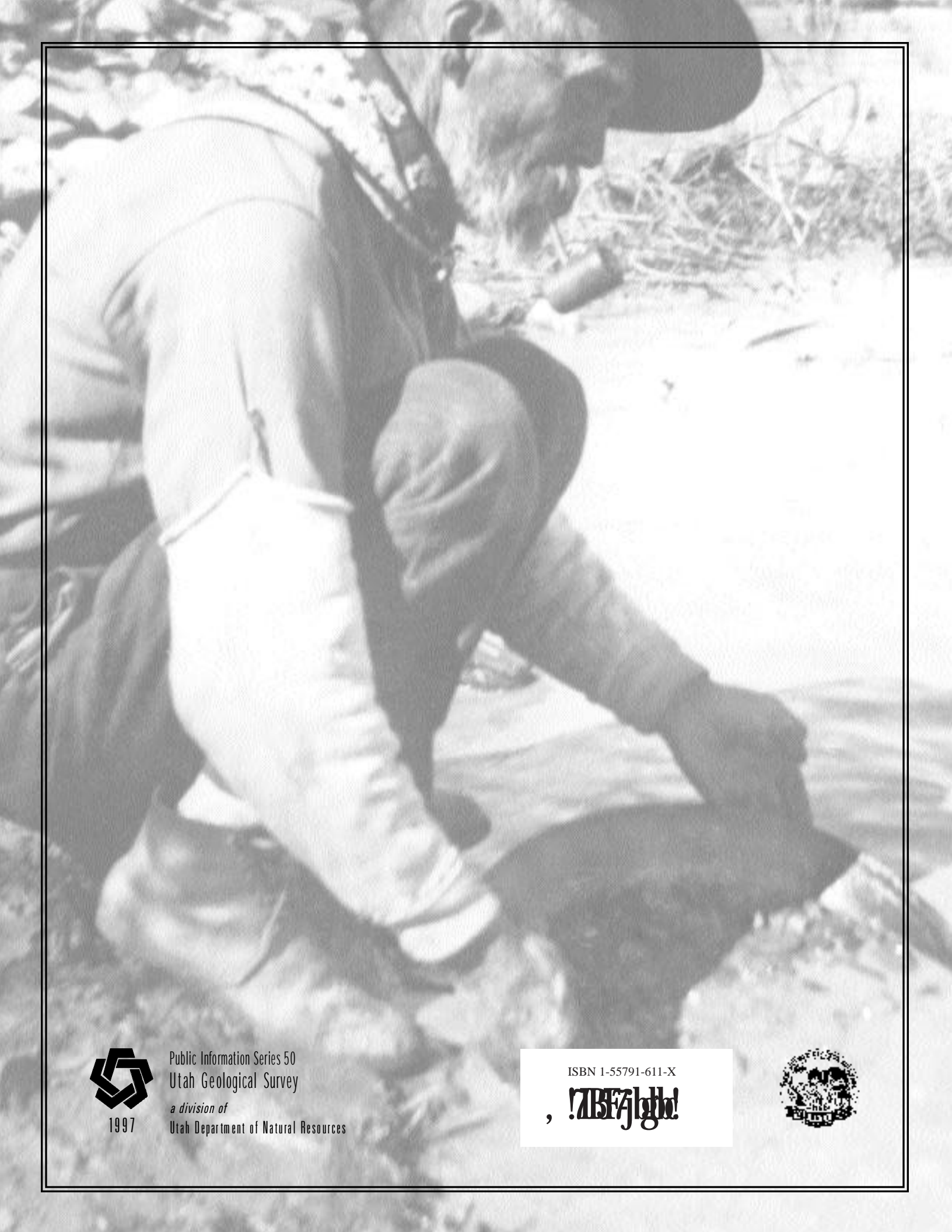
Principal gold-producing districts of the United States, USGS Professional Paper 610, 283 p., 1968. Information on the discovery, history of development, production, and geology of more than 500 gold-producing districts in the United States.

Placer gold deposits of Utah, USGS Bulletin 1357, 26 p., 1 pl., 1:1,000,000, 1973. Describes eighteen placer districts with map coverage, accessibility, extent, production history, gold source, and references for each location.

Prospecting for gold in the United States, USGS General Interest Publication, 19 p., 1986. General information on gold prospecting and placer and lode deposits.

Gold, USGS General Interest Publication, 23 p., 1993. General gold information and history of gold exploration.

Suggestions for prospecting, USGS General Interest Publication, 24 p., 1991. Information on prospecting techniques, geochemical and geophysical prospecting, mining claims, and prospector services.



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